

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/051182

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L27/15 H01L23/29

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 278 244 A (LG ELECTRONICS INC) 22 January 2003 (2003-01-22)	1-5, 8-12, 20-22, 26-28
A	paragraph '0022! - paragraph '0057!; figures 1-3E	6,7, 13-19, 23-25
X	----- US 2002/125822 A1 (RUTHERFORD NICOLE ET AL) 12 September 2002 (2002-09-12)	1-7, 9-12, 20-28
Y	paragraph '0026! - paragraph '0054!; figures 1-3	19
A	----- -/--	8,13-18

☒ Further documents are listed in the continuation of box C☒ Patent family members are listed in annex

* Special categories of cited documents

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *Z* document member of the same patent family

Date of the actual completion of the international search

20 December 2004

Date of mailing of the international search report

29/12/2004

Name and mailing address of the ISA

European Patent Office, P B 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel (+31-70) 340-2040, Tx 31 651 epo nl,
 Fax. (+31-70) 340-3016

Authorized officer

Krause, J

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/051182

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	US 2003/003225 A1 (CHOI DO-HYUN ET AL) 2 January 2003 (2003-01-02)	1,9-11, 13-18, 20-24, 26-28
Y	paragraph '0026! - paragraph '0051!; figures 2,3A-C	19
A		2-8,12, 25
X	----- US 2003/117066 A1 (SILVERNAIL JEFFREY ALAN) 26 June 2003 (2003-06-26)	1-7,9, 20,22, 26-28
A	paragraph '0026! - paragraph '0044!; figures 1-6	8,10-19, 21,23-25
X	----- US 6 573 652 B1 (GROSS MARK EDWARD ET AL) 3 June 2003 (2003-06-03)	1-3, 8-11,19, 20,22, 26-28
A	column 3, line 9 - column 6, line 50; figures 1,2	4-7, 12-18, 21,23-25
A	----- EP 0 822 586 A (TEXAS INSTRUMENTS INC) 4 February 1998 (1998-02-04) page 3, line 38 - page 4, line 37; figures 1-3	1-28
A	----- DE 196 03 746 A (BOSCH GMBH ROBERT) 24 April 1997 (1997-04-24) column 3, line 14 - column 6, line 65; figures 1-3	1-28

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/051182

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1278244	A	22-01-2003	KR 2003008818 A	29-01-2003
			CN 1399502 A	26-02-2003
			EP 1278244 A2	22-01-2003
			JP 2003133063 A	09-05-2003
			US 2003017297 A1	23-01-2003
<hr/>				
US 2002125822	A1	12-09-2002	US 6522067 B1	18-02-2003
			US 6268695 B1	31-07-2001
			EP 1145338 A1	17-10-2001
			JP 2002532850 T	02-10-2002
			TW 439308 B	07-06-2001
			WO 0036665 A1	22-06-2000
			US 2003104753 A1	05-06-2003
			US 6573652 B1	03-06-2003
			US 6548912 B1	15-04-2003
			US 2001015620 A1	23-08-2001
<hr/>				
US 2003003225	A1	02-01-2003	EP 1410692 A1	21-04-2004
			JP 2003007454 A	10-01-2003
			WO 02104077 A1	27-12-2002
			KR 2002096813 A	31-12-2002
<hr/>				
US 2003117066	A1	26-06-2003	NONE	
<hr/>				
US 6573652	B1	03-06-2003	US 6522067 B1	18-02-2003
			AU 4349801 A	07-11-2001
			CN 1426605 T	25-06-2003
			EP 1279197 A1	29-01-2003
			JP 2003532260 T	28-10-2003
			TW 493290 B	01-07-2002
			WO 0182389 A1	01-11-2001
			US 2003104753 A1	05-06-2003
			EP 1145338 A1	17-10-2001
			JP 2002532850 T	02-10-2002
			TW 439308 B	07-06-2001
			WO 0036665 A1	22-06-2000
			US 6548912 B1	15-04-2003
			US 2002125822 A1	12-09-2002
<hr/>				
EP 0822586	A	04-02-1998	EP 0822586 A2	04-02-1998
			JP 10074755 A	17-03-1998
			TW 449898 B	11-08-2001
			US 6114186 A	05-09-2000
<hr/>				
DE 19603746	A	24-04-1997	DE 19603746 A1	24-04-1997
			WO 9716053 A1	01-05-1997
<hr/>				